

Application No.: 10/525,814
Art Unit: 2611

Response
Attorney Docket No.: 052152

AMENDMENTS TO THE DRAWINGS

In item 2 of the Action, the Examiner asserts that Figure 12 should be designated by the legend "Prior Art", because only that which is old is illustrated. Accordingly, Fig. 12 has been amended to recite "Prior Art," as suggested by the Examiner.

The attached replacement sheets of drawings include changes to Fig.12.

REMARKS

Claims 1-11 are pending in the present application, of which claims 2, 3, 5, 7, 10 and 11 have been withdrawn from consideration. Reconsideration in view of the following remarks is respectfully requested.

Drawings:

Fig. 12 stands objected to in item 2 of the Office Action due to the Examiner's assertion that Fig. 12 should be designated by a legend such as "Prior Art". In accordance with the Examiner's suggestion, Fig. 12 has been amended such that it is now designated by the legend "Prior Art".

Double Patenting Rejection:

Claim 1 is provisionally rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claim 1 of co-pending application No. 10/525,727.

This rejection is respectfully traversed. That is, Applicants traverse the obviousness double patenting rejection on the grounds that claim 1 of the present application is patentably distinct from claim 1 of U.S. Application No. 10/525,737. Claim 1 of U.S. Application No. 10/525,737 fails to disclose *transmitting said plurality of transmission data sequences $S_{A,X}$, $S_{B,Y}$, ... onto the same transmission line at the same time*, as called for in claim 1 of the present application, and instead is concerned with repeating each finite-length signal of said finite-length

signals $S_{A,X}$, $S_{B,Y}$, ... to produce a pseudo periodic signal ..., $S_{A,X}$, $S_{A,X}$, $S_{A,X}$..., ..., $S_{B,Y}$, $S_{B,Y}$, $S_{B,Y}$, ..., ...; and cutting out a part from said pseudo periodic signal to produce a signal of a predetermined length longer than N_m for making said signal a transmission signal.

As to the Merits:

As to the merits of this case, the Examiner sets for the following rejections:

claims 1, 4, 8-9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Naoki Suehiro et al. (hereinafter Suehiro), "Very Efficient Wireless Frequency Usage by Coherent Addition of Multipath Signals Using ZCCZ sequence Set", Graduate School of Systems and Information Engineering, July 2002; and

claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Naoki Suehiro et al. (hereinafter Suehiro), "Very Efficient Wireless Frequency Usage by Coherent Addition of Multipath Signals Using ZCCZ sequence Set", Graduate School of Systems and Information Engineering, July 2002, as applied to claim 1 above, and further in view of Kelsuke Higuma et al. (hereinafter Higuma), "Simulation of very Efficient Wireless Frequency Usage System using Multipath Equation on Spread Time Signals", graduate School of Systems and Information Engineering, June 2001.

Each of these rejections is respectfully traversed.

Independent Claim 1:

Independent claim 1 calls for producing a plurality of transmission data sequences

$$S_{A,X}=(x_0A, 0\dots 0, x_1A, 0\dots 0, x_2A, 0\dots 0, \dots, x_{m-1}A, 0\dots 0)$$

$$S_{B,Y}=(y_0B, 0\dots 0, y_1B, 0\dots 0, y_2B, 0\dots 0, \dots, y_{m-1}B, 0\dots 0)$$

(0 indicates a null time of a unit length where no signal is generated)

using a plurality of data sequences

$$A=(a_0a_1\dots a_{N-1}), B=(b_0b_1\dots b_{N-1}), \dots \text{ and}$$

a plurality of coefficient sequences

$$X=(x_0x_1\dots x_{m-1}), Y=(y_0y_1\dots y_{m-1}), \dots; \text{ and}$$

transmitting said plurality of transmission data sequences $S_{A,X}$, $S_{B,Y}$,... onto the same transmission line at the same time.

The Examiner compares claims 1, 4, 8-9 with Suehiro in the Office Action, and appears to assert that Suehiro shows a plurality of data sequences A, B, ... and a plurality of coefficient sequences X, Y, ... in equation (1) of Section 3, and also shows a plurality of transmission data sequences $S_{A, X}$, $S_{B,Y}$, ... in Sections 1-4.

However, a plurality of transmission data sequences produced in Suehiro are not produced by equation (1). A plurality of transmission data sequences obtained with the operation

of equation (1) are different from a plurality of transmission data sequences produced by this invention.

The transmission data sequences of this invention have a data structure wherein a plurality of transmission data are arranged with 0 data of a predetermined length added between the plurality of the transmission data.

It is obvious that a plurality of transmission data produced by Suehiro are not arranged with 0 data of a predetermined length added between the plurality of the transmission data. Because data A (1, 1, 1, -1, 1, 1, 1, -1, 1, 1, 1, -1, 1, 1, 1, -1) in Section 4 of Suehiro has no 0 data.

The objection of this invention is to reduce an increase in amplitude of the signal during the modulation of transmission data through spread spectrum, and to reduce the dynamic range of an amplifier.

The data structure which is not arranged with 0 data of predetermined length added between the plurality of the transmission data, when a plurality of transmission data sequences are transmitted at the same time, a plurality of amplitude of the signal are made to increase an amplitude of the transmission data.

A circuit structure is necessary to process signals which have a plurality of amplitude.

When a plurality of transmission data sequences produced by Suehiro are transmitted at the same time, the same problem will occur.

High Rate Information based on Multipath Equation of Section 5, in Higuma shows a transmission signal $b_0 (1, B_0, B_0, B_0, B_0, 1, 0, 0, 0) + \dots + b_3 (0, 0, 0, -1, B_1, B_1, B_1, 1)$. A plurality of amplitude of a transmission signal will be made using the transmission signal.

On the other hand, the data structure which is arranged 0 data of predetermined length added between the plurality of the transmission data, when a plurality of transmission data sequences are transmitted at the same time, the amplitude of the transmission signal is pulse shaped to reduce the spread of the amplitude of the transmission signal.

In view of the aforementioned remarks, Applicants submit that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP



Thomas E. Brown
Attorney for Applicants
Registration No. 44,450
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

TEB/nrp